Mathematics Toolkit: Grade 6 Objective 2.A.2.a

Standard 2.0 Knowledge of Geometry
Topic A. Plane Geometric Figures
Indicator 2. Analyze geometric relationships
Objective a. Compare and classify triangles by sides
Assessment Limits:
Use scalene, equilateral, or isosceles

Table of Contents

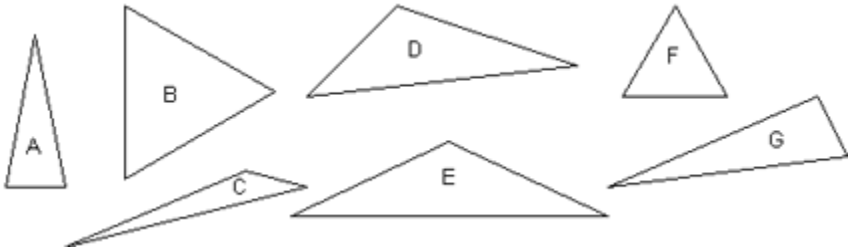
Objective 2.A.2.a Tools

Higher Order Thinking Skills

Mathematics Grade 6 Objective 2.A.2.a Assessment Limit 1

Level 1: Knowledge/Comprehension

Which of the triangles below appear to be scalene triangles?



Answer: Triangles C, D, and G appear to be scalene.

Level 2: Application/Analysis

Rewrite each statement with the definition of the second type of triangle. Determine whether each statement is true or false. Explain why your answer is true. Use what you know about the sides of triangles in your explanation. Use words, data, and/or symbols in your explanation.

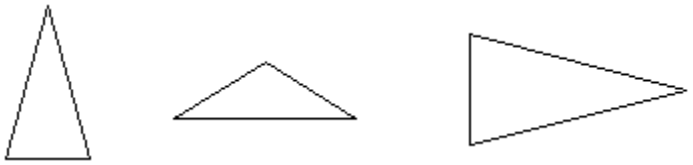
1. All equilateral triangles are isosceles.
2. No isosceles triangle is equilateral.
3. No scalene triangle is isosceles.
4. Some equilateral triangles are scalene.

Sample correct responses:

1. All equilateral triangles have *at least two congruent sides*. True. If the triangle has three congruent sides, then it has two congruent sides.
2. No isosceles triangle has *three congruent sides*. False. If the isosceles triangle has three congruent sides, it is equilateral.
3. No scalene triangle has *at least two congruent sides*. True. If a triangle is scalene it may not have any congruent sides.
4. Some equilateral triangles have *no congruent sides*. False. If a triangle is equilateral, it has three congruent sides. A scalene triangle can have no congruent sides.

Level 3: Synthesis/Evaluation

Look at the isosceles triangles below.



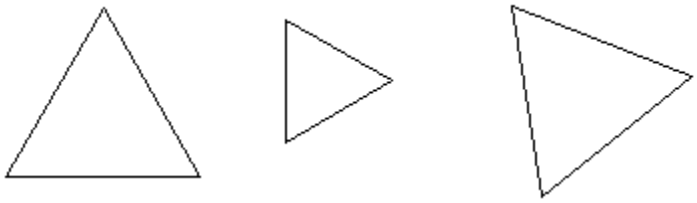
Do all isosceles triangles look the same? What similarities do they have? What differences?

> Sample correct response: All isosceles triangles have two sides that measure the same. Two isosceles triangles may not have the same side measures or angle measures. Two isosceles triangles may not have the same size or shape.

How could you change an isosceles triangle to make it equilateral, if it is not equilateral?

> Sample correct response: Make the third side of the isosceles triangle the same size as the two congruent sides. Then the triangle will be an equilateral triangle.

Look at the equilateral triangles below.



Do all equilateral triangles have the same size and shape? Are any equilateral triangles similar? Describe equilateral triangles that are similar. Are any equilateral triangles congruent? Describe equilateral triangles that are congruent.

> Sample correct response: All equilateral triangles will have the same shape, but not necessarily the same size. All equilateral triangles are similar. They have the same shape, but if the sides of the two equilateral triangles are different, they will not have the same size. If the sides of two equilateral triangles are the same, the triangles have the same size and are congruent.